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December 4, 1998

VIA U.S. EXPRESS MAIL

Assistant Commissioner of Patents
Box New Patent Application
Washington, D.C. 20231

Re: Patent Application entitled "CUSTOMIZATION AND CACHING OF GENERATED PERSONALIZED CONTENT"
Inventors: Michael K. Makuch and Neil Webber (024379.0013)

Dear Sir:

Enclosed for filing in the U.S. Patent and Trademark Office is:

1. A Specification (16 pages);
2. Claims (6 pages; 20 claims);
3. Abstract (1 page);
4. Drawings 1-4 (4 pages);
5. Verified Statement Claiming Small Entity Status;
6. Assignment;
7. A combined Declaration and Power of Attorney;
8. Certificate of U.S. Express Mail; and
9. A return postcard.

Please date stamp the enclosed postcard to verify receipt of the above-referenced documents.

Sincerely,

BROBECK, PHLEGER & HARRISON LLP

By: _____
Benjamin C. Huang
Reg. No.: 41,080

BCH:ccl
Enclosures

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) and 1.27(c)) – SMALL BUSINESS CONCERN
(FORM PTO/SB/10)

Applicant(s) or Patentee(s):	Michael K. Makuch and Neil Webber
Assignee(s):	Vignette Corporation
Serial or Patent No.:	Unknown
Filed or Issued:	
Title:	CUSTOMIZATION AND CACHING OF GENERATED PERSONALIZED CONTENT

I hereby declare that I am an official of the small business concern empowered to act on behalf of the concern identified below:

Name of Small Business Concern:	Vignette Corporation
Address of Small Business Concern:	3410 Far West Boulevard, Suite 300 Austin, Texas 78731

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year, and (2) concerns are affiliates of each other when either, directly, or indirectly, once concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in the specification filed herewith with title as listed above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights in the invention must file a separate verified statement averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(c).

Each person, concern or organization having any rights in the invention is listed below:

[no such person, concern or organization exists.]

Separate verified statements are required from each named person, concern, or organization having rights to the invention averring to their status as small entities. (37 CFR 1.28(b))

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the applicant, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: NEIL WEBBER
TITLE OF PERSON IF OTHER THAN OWNER: CTO
ADDRESS OF PERSON SIGNING: 12 FOREST MESA ROUND ROCK TX 78664

SIGNATURE: _____ DATE: 11/30/98

CUSTOMIZATION AND CACHING OF GENERATED PERSONALIZED CONTENT

TECHNICAL FIELD

This invention relates generally to the usage of a computer network by a user as more specifically to the techniques of providing specialized information to a network user based on accumulated user data.

BACKGROUND

The World Wide Web (WWW) of computers is a large collection of computers operated under a client-server computer network model. In a client-server computer network, a client computer requests information from a server computer. In response to the request, the server computer passes the requested information to the client computer. Server computers are typically operated by large information providers, such as commercial organizations, governmental units, and universities, and are typically referred to as "web sites". Client computers are typically operated by individuals.

To ensure interoperability in a client-server computer network, various protocols are observed. For example, a protocol known as the Hypertext Transport Protocol (HTTP) is used to move hypertext files across the WWW. In addition, the WWW observes several protocols for organizing and presenting information, two examples being the Hypertext Markup Language (HTML) and the Extensible Markup Language (XML). The information delivered by the server computer is typically referred to as a "web page".

A server computer can use a technique known as "dynamically-generated customized pages" to create a web page in response to a request for information from a client computer. A dynamically-generated customized page results in a set of

information in a particular format. For example, a first client computer may support the ability to represent information in a number of columns, while a second client computer may support the ability to represent information in a table. Thus, a server computer receiving a request from the first client computer can dynamically generate the requested information in a format with columns. It can respond to a request from the second client computer by dynamically generating the requested information in table format. In this example, two customized pages are created to represent the same information.

It is not unusual for a server computer on the WWW to contain thousands or even tens of thousands of web pages. This large quantity of information makes it difficult for a person, i.e., a "web site visitor", operating a client computer to locate the information of most interest to them. In much the same way that dynamically-generated customized pages can be used to present the same information in a different presentation format for each client computer, dynamically-generated customized pages can be used to select the information to be displayed so that each web site visitor may see information customized to their specific interests. This process is known in the art as *personalization*.

Personalization can be achieved through current technology using survey questions to ascertain the visitor's interests, and using dynamically-generated customized pages compute customized pages for each visitor. There are two disadvantages to this approach. First, web site visitors frequently prefer to not fill out questionnaires when visiting a web site, making it difficult for a site to gather the necessary visitor preference data. Second, dynamic generation of every page on a server computer does not scale well for large numbers of requests. In other words, existing methods provide a relatively slow response when a large number of requests are made for personalized pages. This slow

response time is attributable to the fact that in existing systems a computer program must be executed to completely generate each dynamic page on every single request.

In view of the foregoing, it would be highly desirable to provide a technique to unobtrusively gather web site visitor preference data and efficiently respond to a large number of requests for personalized pages.

SUMMARY OF THE INVENTION

The invention is a method and apparatus for learning in what a visitor is interested and what demographics the visitor may demonstrate so as to deliver personalized information to the visitor based upon accumulated data, and to do so without requiring dynamic page generation for each individual visitor.

For example, a visitor may demonstrate interest in football and, in particular, his favorite football team. The present invention learns this by observing the behavior of the visitor, i.e., which sports articles he reads and if such articles are focused even further. If a tendency is observed, the learned knowledge is then used to deliver more information about that team to the visitor. Such preferred articles can be recycled by having the invention deliver the same information to other visitors who have the same favorite team.

Visitor interests can be tracked by including "keyword directives" in content contained within the web site. These keyword directives specify a keyword indicating the type of category of information represented by the content. As the content is delivered to the visitor in the form of a web page, the number of keyword directives attached to the content is accumulated into a specified visitor profile. Over time, this visitor profile can represent the types of information the visitor has viewed and serve as an indicator of his or her preferences. In this way, the invention can accumulate a visitor profile unobtrusively, without requiring the visitors to fill out a survey or questionnaire. The profile may also be augmented with explicit information the visitor provides over time, such as a name or address provided when ordering a product from the site.

The present invention then delivers personalized pages to the visitor by examining such visitor's profile. Another directive, called a personalization directive, may be placed into web pages that are to be customized by the invention. These directives cause

a personalization function to be applied to the visitor's profile data. The result of the personalization function defines an attribute to be used for locating personalized page fragments, called "page components", that the invention then assembles into a customized page for the visitor. In this manner, each visitor may receive a page containing three different classes of data: common data received by all visitors, personalized data received by a similar group of visitors, and individual data received only by this one visitor. The present invention assembles all of this data and delivers a "personalized" page to the visitor.

The present invention stores personalized page components in a cache. Subsequent delivery of the same page components is satisfied by retrieving the information from the cache, rather than by dynamically generating it each time. The present invention can therefore take advantage of a common situation where large groups of visitors share similar interests and should receive the same data. Since previously generated personalized page components need not be re-generated for every visitor, computational overhead is reduced tremendously by supplying such pre-generated page components..

For example, a home page for a large web site might include a personalization directive describing the inclusion of an article related to a visitor's favorite NFL team. The personalization directive function examines the visitor profile, determines the favorite team, and includes the appropriate page with information about that team. In this way, each visitor to the web site might receive a different introductory web page, customized for their preferences. Even though every visitor receives a page that appears to be customized for them, since, in fact, there are only 30 or so NFL teams; the caching

mechanism of the invention ensures that the dynamic page generation only occurs at most 30 or so times. If one million visitors come to the site, most of the visitors simply receive a web page that was already dynamically generated for a previous visitor. In essence, the invention allows "personalized" pages to be constructed by choosing from a set of previously computed pages, rather than by dynamically computing each page for every visitor.

It is a primary object of the present invention to provide an efficient mechanism for gathering visitor preference and behavior information and storing it in a visitor profile.

Another object of the invention is categorizing content in a web site and associating viewed categorized content with a user to develop a visitor profile.

It is another object of the present invention to provide a highly efficient and scalable mechanism for assembling personalized pages based on information contained in the visitor profile, without requiring a full dynamically-generated customized page computation for each visitor.

It is still another object of the present invention to allow for specific data from the visitor profile to be directly inserted into personalized pages.

Yet another object of the invention is to insert pre-customized content into various areas of a single web page.

It is a further object of the invention to allow for visitor profile data to be based on the actual content viewed by the visitors.

It is another object of the invention to allow for visitor profile data to be gathered and updated efficiently even in the case where multiple web servers are operating simultaneously to deliver information to users in parallel.

It is another object of the invention to provide efficient management and storage of visitor profile data for large web sites that may have as many as 10 million visitors or more.

The above objects of the invention and the brief description of the preferred embodiment should be construed to be merely illustrative of some of the more prominent features and applications of the invention. Many other beneficial results can be attained by applying the disclosed invention in a different manner or modifying the invention as will be described. Accordingly, other objects and a fuller understanding of the invention may be had by referring to the following Detailed Description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and the advantages thereof, reference should be made to the following Detailed Description taken in connection with the accompanying drawings in which:

Figure 1 illustrates a client-server computer network that may be operated in accordance with the present invention;

Figure 2 is an example page delivered by a web server;

Figure 3 illustrates a relationship diagram of the primary components in the present invention; and

Figure 4 illustrates the invention configured for use with multiple server computers.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 illustrates a client-server computer network **100** that may be operated in accordance with the present invention. For the preferred embodiment, the network **100** includes at least one client computer **110** and at least one server computer **130**. The client computer **110** and the server computer **130** are connected by a transmission channel **120**, which may be any wire or wireless transmission channel.

The client computer **110** may be a standard computer including a Central Processing Unit (CPU) **112** connected to a memory (primary and/or secondary) **114**. The memory **114** stores a number of computer programs, including a "browser" **116**. As known in the art, a browser is used to communicate with remote server computers **130** and to visually present the information received from such computers. The client computer **110** establishes network communications through a standard network connection device **118**.

The server computer **130** includes standard server computer components, including a network connection device **138**, a CPU **132**, and a memory (primary and/or secondary) **134**. The memory **134** stores a set of computer programs to implement the processing associated with the invention. These programs are collectively referred to as a the web server software **136**. The invention may be used with any web server software, including, but not limited to, Netscape Enterprise Server from Netscape Inc., Internet Information Server from Microsoft, or Apache from the Apache HTTP Server Project.

Figure 2 illustrates a typical web page **200**. The web page contains graphical information and textual information. Web page design varies greatly, but usually follows a general pattern of being divided up into sections of related information. In the provided example, there are four areas of information **210**, **220**, **230**, and **240**. In the terminology

of the invention, each of the distinct sections of the web page, such as **210**, **220**, **230** and **240**, are called 'components'. The component on top **210** contains a company logo graphic **212**. Below it is a component **220** containing sports news stories intended to be of interest to the web site visitor. At the bottom **230** is what is called in the art a "navigation bar" containing hyperlinks **232**, **234** to other web pages on the site. In the preferred embodiment, a hyperlink is defined by HTML (or any other appropriate markup language) as a point-and-click mechanism implemented on a computer that allows a viewer to link (or jump) from one screen display where a topic is referred to (called the 'hyperlink source') to other screen displays where more information about that topic exists (called the 'hyperlink destination'). A hyperlink thus provides a computer-assisted way for a human user to efficiently jump between various web pages containing related information. Hyperlinks can be graphical **234**, stylized text **232**, or even plain text **224**, conventionally formatted with underlining.

In the example of Figure 2, the small component **240** on the page illustrates personalized information as provided in the manner of the present invention. The first line **242** shows an example of 'monogramming', where the generic information on the page has been customized with information specific to a particular web site visitor. The next line **244** shows an example of the results of a personalization directive. The information on the page has been customized to reflect the fact that this visitor, preferably based on prior visits, has demonstrated interest in the Round Rock Rocker's football team; therefore, a custom hyperlink **244** has been added to the page to provide the visitor with a quick way of obtaining more information about their favorite team.

The main story component **220** shows another example of personalization. Visitors interested in football can be shown a set of football stories **221**, **223**, **225**; whereas other visitors may be shown basketball or baseball stories.

This type of personalization can be achieved in the prior art only by forcing the user to explicitly answer survey questions and creating individualized pages. For example, a survey would ask the visitor whether the visitor preferred to see football or baseball stories, and then ask the visitor for their favorite teams in order to obtain profile information. Furthermore, current technology would require that every page on the web site be generated dynamically for each visitor, which results in slow response times and poor performance.

The present invention solves the problem of explicit questions and the performance problem. In the preferred embodiment, the method is implemented on a web site server. When the web site is being developed, "Web Content Items" are created by the developers of the web site. Web Content Items can be an entire web page, a component of a web page, an insertion into a web page, a graphic link and/or any other items that can be accessed and viewed by a user. Often times a content item is a self-contained story or fragment of data; for example, the individual stories **221**, **223**, **225** are each a Web Content Item. Web Content Items can reside at more than one URL. The Web Content Items are preferably defined through a markup language, including, but not limited to, HTML.

In the preferred embodiment the developer can then assign at least one category and/or a keyword to each of the Web Content Items. These categories and key words are used to determine visitor interest when they access Web Content Items on a Web Site.

In such a preferred embodiment, the developer thereby defines all the categories that can be used within the system. The categories might be broad definitions and/or include keywords. The developer can then devise a set of Web Content Items that can 'personalize' the Web Site for the visitor the next time the visitor accesses the web site. This personalization can be done according to the accumulated data in the visitor's file, gathered implicitly by observing which Web Content Items, and therefore which categories have been of interest to the visitor in the past. The 'personalization' will not be a one-time dynamically generated customized web page, which would be too resource intensive and therefore slow, but will be based on predetermined Web Content Items that are developed and then cached into memory.

The accumulation process functions when a visitor accesses a URL and the associated Web Content Items. At that point the program registers the representative categories belonging to the web page. If this is a new visitor, a new "visitor file" for that visitor is created; otherwise, a previous visitor file is accessed. In either case, the statistics on the accessed categories is updated in the visitor's file.

The visitor file contains a running tally of the visitor's interest preferably based on accessed Web Contents Items. In a preferred embodiment, an algorithm is included that gives greater weight to more recently accessed Web Content Items, thereby accounting for changing interests and tastes.

When a visitor accesses a web site that has an existing file for that visitor, the program determines from the file and the tallied categories, which pre-customized content, i.e., the personalized page components, to provide to the visitor.

Such predetermined content is cached in memory and is, preferably, designed by a web site to appeal to interests in certain topics.

The benefits of the present invention are immediately evident. The present invention gives the visitor the impression of a customized page visitor when in actuality it presents pre-customized pages and/or page components that have been cached. The system thereby conserves computing resources and retains a higher access speed on a server as opposed to those systems that dynamically generate customized pages for each visitor.

In the alternative embodiment, the pre-customized pages have at least one base Web Content Item and insert areas wherein personalized page components are provided and inserted to make each page appropriate for a given preference. In another alternative embodiment, the entire page can be obtained from the cache.

Returning to Figure 2, the page is illustrative of how a base page is pre-customized to make it seemingly customized for a given visitor. Assuming that a visitor frequents a sports-oriented web site in the preferred embodiment, the main story on the page could be the same for all the pre-customized pages, for example, a Super Bowl story; however, the additional stories on the page can be adjusted with inserts of personalized page components items according to the visitor's preferences, such as individual team information. Assuming that visitor A in prior visits has frequented a number of Web Content Items with a keyword of "football", then when visitor A returns to the web site a page with personalized page components will appear where the page components (e.g., **221**, **223**, **225**) are Web Content Items comprising football-related stories.

Figure 3 shows a relationship diagram for the invention. Requests begin when a browser **310** operating on a client computer (as in **110** in Figure 1) makes a request to the web site server (as in **130** in Figure 1). When the site is being accessed, the server request handler **320** analyzes the incoming request and the corresponding pages, and invokes the monogrammer **330** and the component assembler **340** as necessary.

The component assembler **340** examines the visitor file, if any, to determine if there is a preference to be associated with the accumulated category and keyword counts of the visitor. The visitor file is obtained from the visitor data manager **350**, which serves as a central coordination point for retrievals and updates of visitor data within a single web server. If there is no file for this visitor, the program generates a file based on the visitor so as to determine the visitors reference for the next page requested.

If a visitor file exists for the current visitor, the program accesses such visitor file to determine the visitor's interests as determined by the keywords associated with prior Web Content Items served, and, in one embodiment, there may be a weighing factor or other algorithmic determination for the additional Web Content Items viewed by the visitor during the most recent usage. The program then selects a pre-customized page or pre-customized page components which should reflect this interest. These selections can be assembled by a component assembler **340**, and may be further subject to personal modification by a monogrammer **330** to make changes such as inserting the visitor's name onto the page.

The component assembler uses the pre-customized file handler **360**, to retrieve the Web Content Items, formatted as pre-customized pages, that are appropriate for this

visitor. Pre-customized pages can be cached in a pre-customized file store **365**, or can be dynamically generated on demand by the dynamic page generator **380**.

The visitor may select any hyperlink on such page to access additional interesting content.

In addition, the visitor can still be shown other content not necessarily directly related to his or her interests. The visitor can still access these hyperlinks and URLs; therefore, in the preferred embodiment, the visitor file is an evolving file, since the visitor's interests can change over time for a number of reasons. Therefore, the present invention can allow an option to give greater weight to recently accessed Web Content Items.

The server request handler **320** can then update the visitor file data with the categories and keyword counts for the information assembled into the final page that is returned to the visitor's browser. The updated visitor file data is delivered back to the visitor data manager **350** and stored in the visitor data file store **375** by the visitor file manager **370**.

Figure 4 shows another embodiment **400** of the invention wherein there are multiple instances of the Server request handler and associated machinery. Web sites often use this form of functional replication to achieve higher performance by sharing the load across multiple server machines. A load balancer, such as a Cisco Local Director, a DNS round robin, or equivalent technology exists between the web site visitor's browser **410** and a set of server request handlers **431, 432, 433**. Each server request handler is a complete copy and typically each one operates on a separate machine. The server request handlers each have their own visitor data manager **441, 442, 443**. As a visitor makes

multiple requests to the web site, each individual request may be redirected by the load balancer to a different request handle and visitor data manager. Therefore, as the category and keyword counts are updated by each individual server, some special mechanism must be used to ensure that updates are not lost by having one set of visitor data overwrite the results of another. This is the reason for having the visitor file manager **470** as a separate mechanism within the invention. There is only one visitor file manager and it serves as the collection point for all updated data generated by the individual visitor data managers **441**, **442**, **443**. A further refinement is that the visitor data managers communicate an incremental update value to the visitor file manager. For example, consider the case where a visitor makes two requests to the web site, with each request being for a page containing keyword "A". The first request might be handled by server request handler **432** (and visitor data manager **442**). The second request might be handled by server request handler **443** (and visitor data manager **443**). Each one of these data managers has a visitor profile stating that the visitor saw one instance of the keyword "A". However, when each reports its results back to the visitor file manager **470**, the visitor file manager sums the results together thus obtaining the correct value of two instances for the keyword "A". The final results is written into the visitor data file store **475** and made available for future operations.

It should be appreciated by those skilled in the art that the specific embodiments disclosed above may be readily utilized as a basis for modifying or designing other methods for carrying out the same purposes of the present invention. It should also be realized by those skilled in the art that such equivalent constructions do not depart from the spirit and scope of the invention as set forth in the appended claims.

WHAT IS CLAIMED:

1. A method of customizing a web site operating on a server computer, said method comprising the following steps:

labeling content of the web site;

when at least one visitor accesses the content of a web site, registering the labeled accessed content in a personalized data file;

storing the data file for at least one visitor;

generating a set of pre-customized displays;

caching the set of pre-customized displays on the server;

when the at least one visitor accesses a web site, analyzing the data file of the visitor and associating the visitor with at least one pre-customized display; and

displaying the pre-customized display to the visitor.

2. The method of Claim 1 wherein labeling the content of the web site comprises attaching at least one category to each web content item.

3. The method of Claim 2 wherein registering the labeled accessed content comprises accumulating the number of accesses to each category in the personalized data file.

4. The method of Claim 3 wherein analyzing the data file comprises:

prioritizing the categories in the data file; and

associating the highest weighted category with at least one pre-customized display.

5. The method of Claim 1 wherein the pre-customized display is an insert to be placed within a web content item.

6. The method of Claim 1 wherein the pre-customized display is a web page.

7. The method of Claim 1 wherein the generating of a pre-customized display is not generated until a first visitor first requires such a display.

8. The method of Claim 7 wherein the pre-customized display is cached to display to any subsequent visitor.

9. The method of Claim 1 wherein storing the data file can be performed by multiple servers operating in parallel, without loss of information.

10. The method of Claim 1 wherein the displaying of the pre-customized display comprises inserting a plurality of pre-customized displays onto a web page accessed by the visitor.

11. A computer readable memory that can direct a server computer to function in a specified manner, comprising:

visitor files stored in said computer memory;

pre-customized web content items stored in said computer memory; and

executable instructions stored in said memory, said executable instructions including:

(a) instructions to access an existing visitor file for a visitor;

(b) instructions to review data in existing visitor file to determine visitor preferences; and

(c) instructions, based on said visitor preferences, to provide pre-customized files to visitor.

12. The computer readable memory of Claim 11 wherein the pre-customized files are pre-customized web content items.

13. The computer readable memory of Claim 11 wherein the existing visitor file contains visitor preference data.

14. The computer readable memory of Claim 13 wherein the visitor preference data contains a count of keywords.

15. The computer readable memory of Claim 14 wherein the keywords have a weighted value dependent upon the time of access of associated web content.

16. A computer program product for operating a web site on a server computer, the computer program product comprising:

a computer usable medium having computer readable program code means embodied in said medium for searching, said computer readable program code means comprising;

means for labeling the content of a web site;

when at least one visitor accesses the content of a web site, means for registering the labeled accessed content in a personalized data file;

means for storing the data file for at least one visitor;

means for generating a set of pre-customized displays;

means for caching the set of pre-customized displays on the server;

when the at least one visitor accesses a Web Site, means for analyzing the data file of the visitor and associating the user with a pre-customized display; and

means for displaying the pre-customized display onto a web page accessed by the visitor.

17. Computer executable software code stored on a computer readable medium, the code for personalizing a web site, the code comprising:

code for labeling the content of a web site with selected categories;

code for generating a data file for a visitor;

code for accumulating information regarding labeled content, to place such information in the visitor data file;

code for determining the selected category associated with the visitor's interest, wherein such determination is based on the accumulated information in the visitor data file; and

code for presenting cached pre-selected web content to the visitor, wherein such pre-selected web content is associated with the selected category.

18. The computer executable software code of Claim 17 further comprising code for weighting accessed information based on at least one specified variable.

19. The computer executable software code of Claim 18 wherein the at least one specified variable is time of access.

20. A computer-readable medium having computer executable software code stored thereon, the code for personalizing a web site without dynamically generated web pages for each visitor, the code comprising:

code for labeling the content of a web site with selected categories;

code for generating a data file for a visitor;

code for accumulating information regarding labeled content, to place such information in the visitor data file;

code for determining the selected category associated with the visitor's interest, wherein such determination is based on the accumulated information in the visitor data file; and

code for presenting cached pre-selected web content to the visitor, wherein such pre-selected web content is associated with the selected category.

CUSTOMIZATION AND CACHING OF GENERATED PERSONALIZED CONTENT

ABSTRACT

Visitor interests can be tracked by including "keyword directives" in content contained within the web site. These keyword directives specify a keyword indicating the type of category of information represented by the content. As the content is delivered to the visitor in the form of a web page, the number of keyword directives attached to the content is accumulated into a specified visitor profile. Over time, this visitor profile can represent the types of information the visitor has viewed and serve as an indicator of his or her preferences. In this way, the invention can accumulate a visitor profile unobtrusively, without requiring the visitors to fill out a survey or questionnaire. The profile may also be augmented with explicit information the visitor provides over time, such as a name or address provided when ordering a product from the site. The invention then delivers personalized pages to the visitor by examining such visitor's profile.

Figure 1: Client/Server computer network

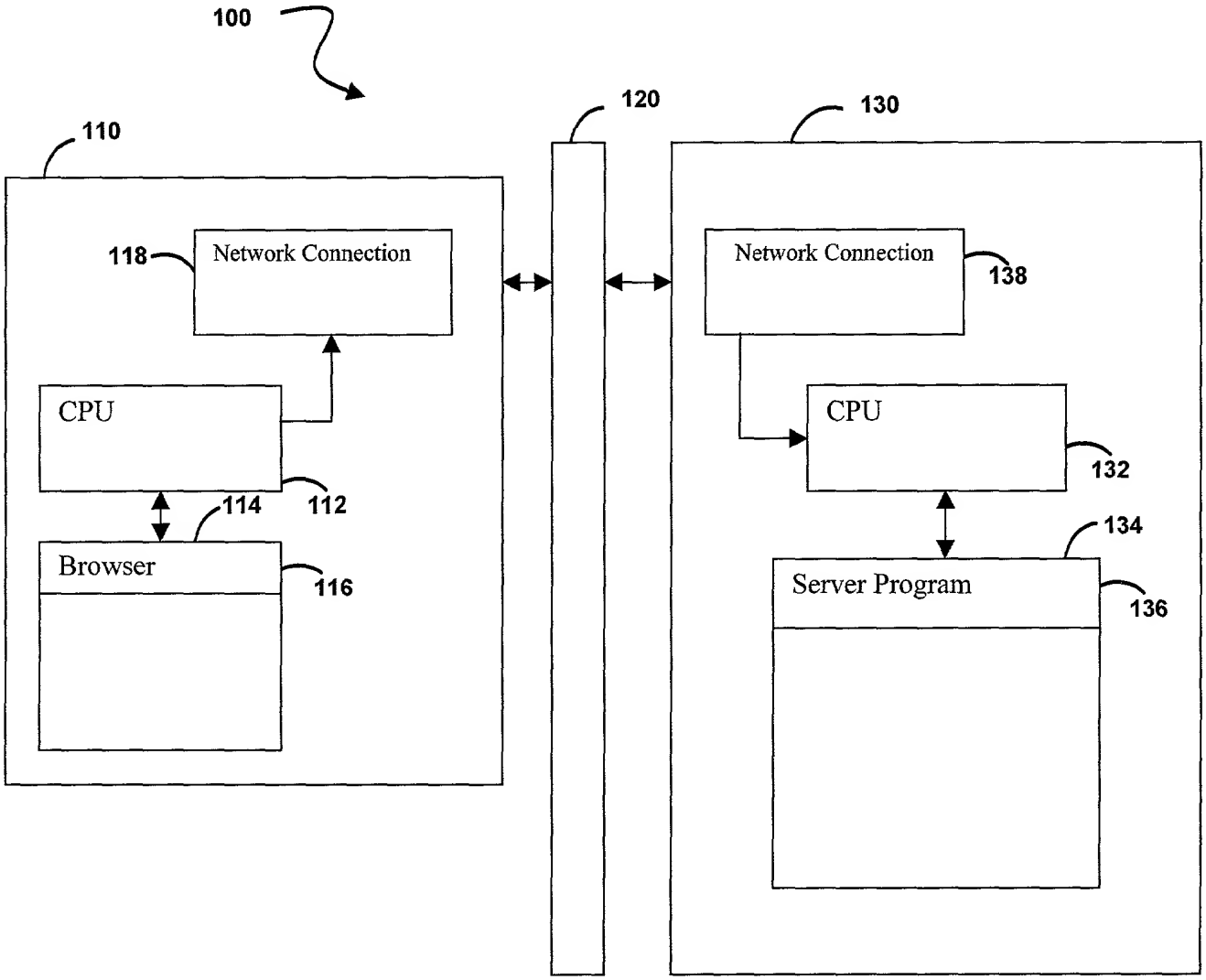


Figure 2: Typical Web Page

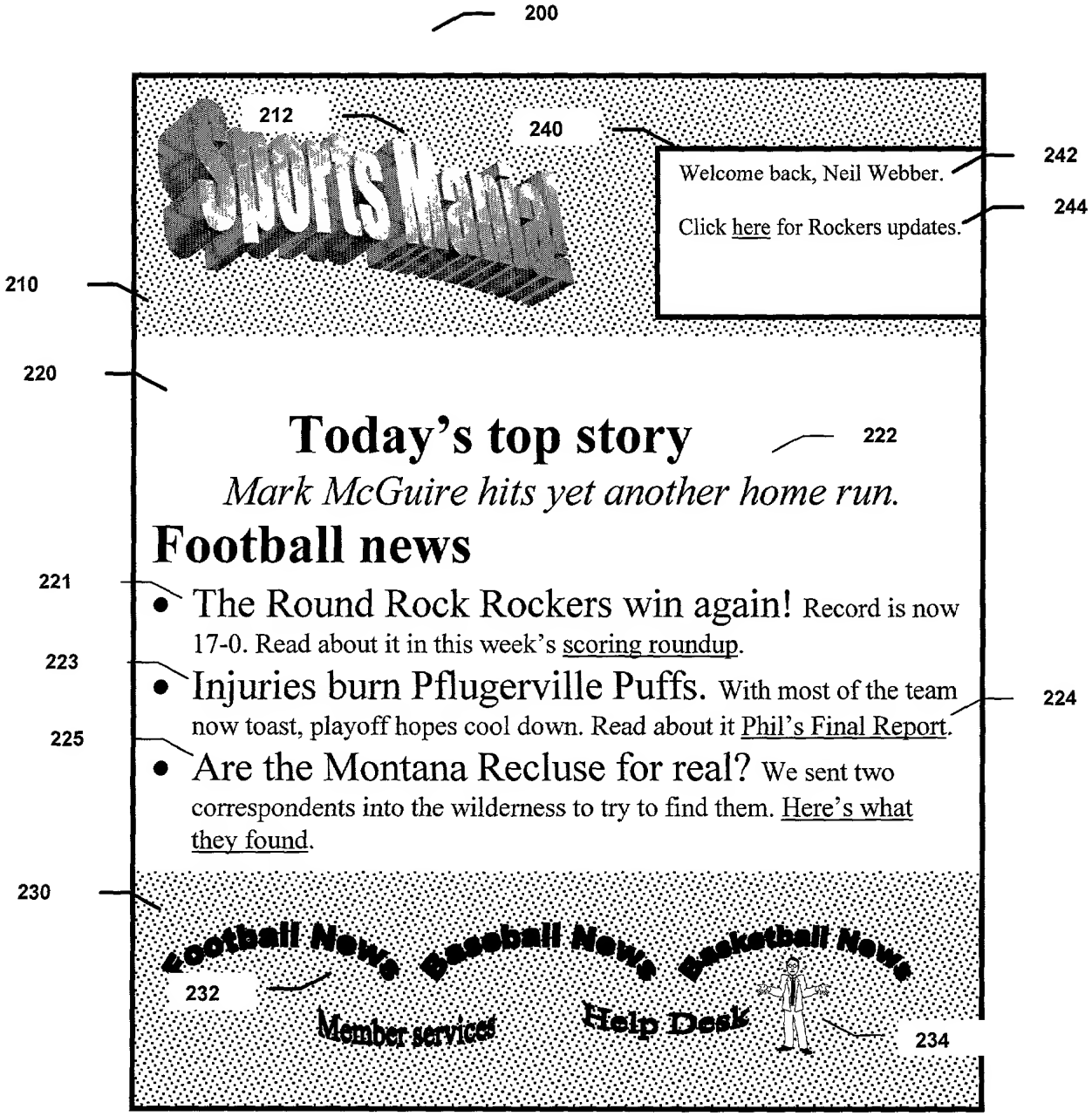


Figure 3: Relationship Diagram of Primary Components

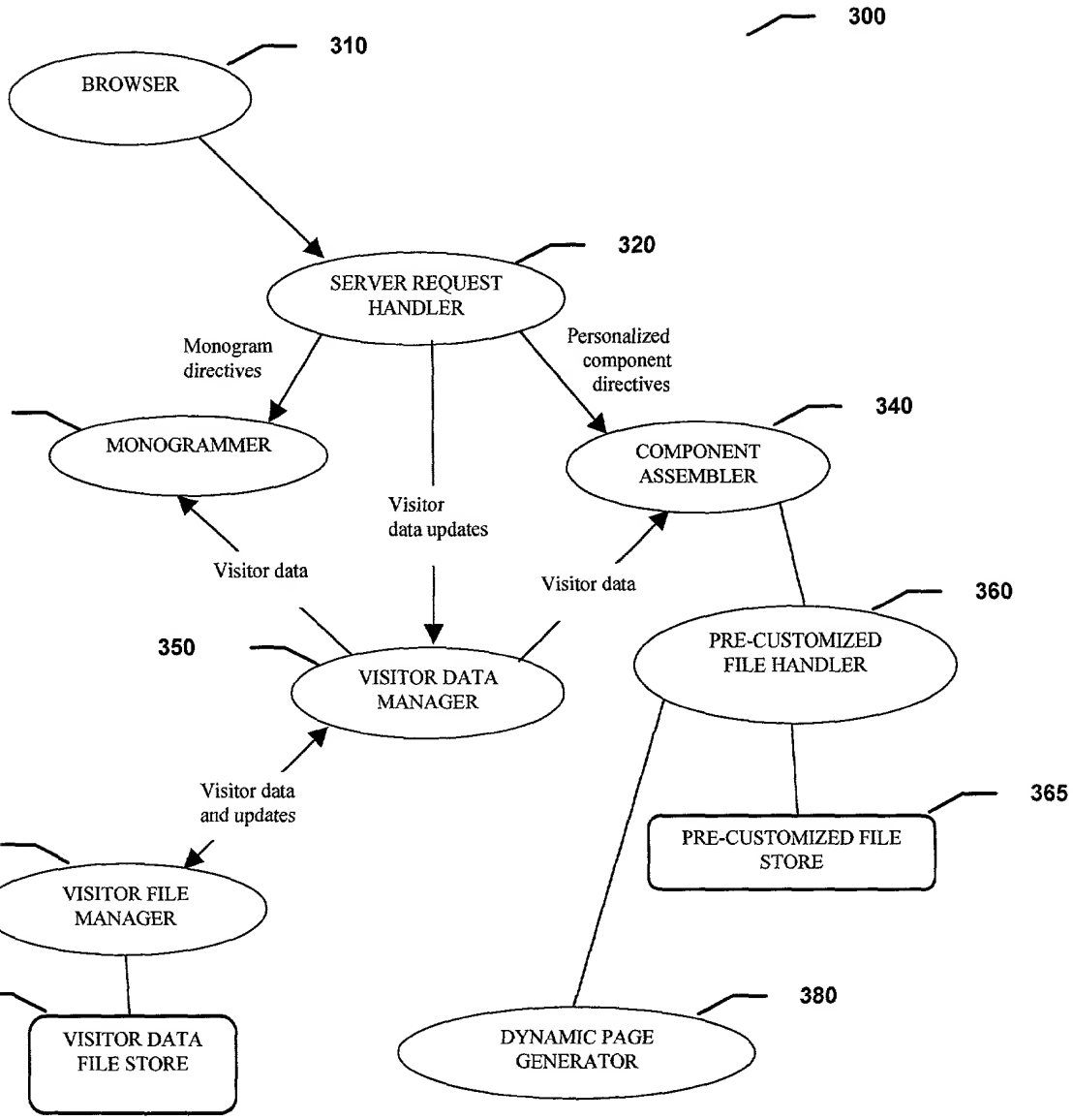
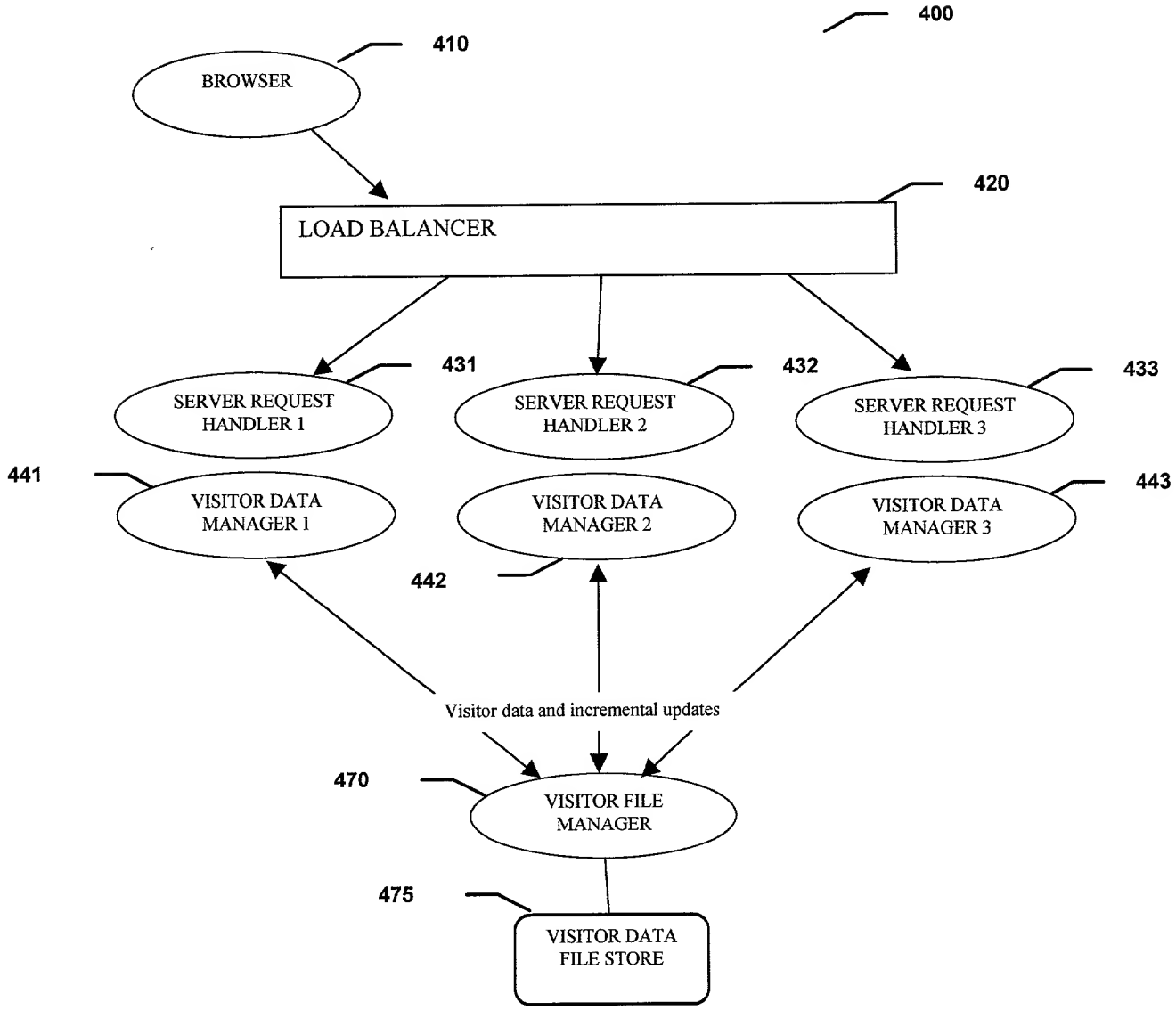


Figure 4: Invention used with multiple server computers



DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "CUSTOMIZATION AND CACHING OF GENERATED PERSONALIZED CONTENT," the specification of which:

☒ is attached hereto.
☐ was filed on _____ as Application Serial No. _____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

Prior Foreign Application No.	Country	Filing Date (mm/dd/yy)	Priority Claimed	Cert. copy Attached
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

Provisional Application No.	Filing Date (mm/dd/yy)
N/A	

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Parent Application No.	Filing Date (mm/dd/yy)	Parent Patent No. (if applicable) or Status
N/A		

I hereby revoke any previous Powers of Attorney and appoint

James D. Smith	Reg. No. 33,036
Benjamin C. Huang	Reg. No. 41,080

said attorney or agent being a member or associate of the firm of Brobeck, Phleger & Harrison LLP, as attorney or agent for so long as he remains with such company or firm, with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.

Please direct all communications to:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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